

Accepted Manuscript

Emerging technologies: Back to the future

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PII: S0924-2244(17)30773-2

DOI: [10.1016/j.tifs.2018.03.023](https://doi.org/10.1016/j.tifs.2018.03.023)

Reference: TIFS 2202

To appear in: *Trends in Food Science & Technology*

Received Date: 7 December 2017

Revised Date: 22 March 2018

Accepted Date: 28 March 2018

Please cite this article as: Knorr, D., Emerging technologies: Back to the future, *Trends in Food Science & Technology* (2018), doi: 10.1016/j.tifs.2018.03.023.

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Abstract:

Background: Emerging technologies, especially high hydrostatic pressure, pulsed electric fields and cold atmospheric plasma applications, are discussed and the need for targeted emerging and future research areas is presented.

Scope and Approach: The need for more data on kinetics, mechanisms, indicator organisms and microbial aggregation is forwarded. Further, more emphasis needs to be laid on: food chain and process integration; on combination processes of various technologies; re-evaluation of existing technologies using modern toolboxes; improved equipment; materials and process design; adaption of or to product requirements and formulations; and better considerations regarding consumer acceptance of emerging technologies as well as appropriate research design and reporting requirements.

Key findings and conclusion: Examples of related data generated in the author's laboratories during the last 35 years are presented to aid towards future research quality, process and product improvements.

Keywords: emerging technologies, high hydrostatic pressure, pulsed electric fields, cold atmospheric plasma

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